ARMY MEDICINE
Serving To Heal...Honored To Serve

United States Army Basic Food Handler's Course

Preventive Medicine

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Purpose and uses

- This presentation helps meet the new employee orientation requirement.
- Portions can also be used to meet continuing education requirements for food employees.
- POC is SPC Hanson

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Purpose of Food Safety

- Protect the health of soldiers
  - Good personal hygiene is a critical measure against foodborne illness
  - establish a systematic approach to training and supervising workers
- Protect food service workers
  - obligated to protect customers and workers from individuals who have health problems or personal habits that can affect food safety
  - a healthy worker with poor personal habits is very likely to cause food contamination

Regulations and References

- Legal Obligation - Federal, State, and local governmental agencies set regulations and standards to protect the public from foodborne illness.
- The U.S. Food and Drug Administration has a model ordnance, the Food Code.
- The Army uses a similar system, TB MED 530, which provides standards for protection and is enforced by the installation medical authority.

Food Safety Hazards

- Only a small percentage of actual foodborne illness cases ever get reported.
- CDC estimates 76 million illnesses annually
  - result in approximately 325,000 hospitalizations and 5,000 deaths
  - estimated 14 million illnesses and 1,800 deaths are caused by known pathogens:
    - *Salmonella*
    - *Listeria*
    - *Toxoplasma*
  - Unknown agents account for the remaining 62 million illnesses

Food Sanitation and Safety Terms

- **Spoilage**. Damage to the edible quality of a food. Meat that is unsafe to eat will not always smell or taste spoiled.
- **Potentially Hazardous Foods (PHF's)**. Foods that allow the rapid growth of bacteria. There are several physical and environmental characteristics that will make a food potentially hazardous. We will discuss these characteristics later in this lesson.

Food Sanitation and Safety Terms

- **Temperature Danger Zone**. Temperature range where bacteria can grow and reproduce rapidly (between 40 and 140 degrees F, or between 5 and 60 degrees C.) Potentially hazardous foods should be kept at temperatures below 40 ºF or above 140 ºF.

Food Sanitation and Safety Terms

- **Cross-contamination -** the transfer of a harmful substance from one food to another by direct or indirect contact
  - Direct cross-contamination involves the transfer of a harmful agent from raw foods to cooked or ready-to-eat foods
    - example of direct contact: blood from thawing ground beef dripping onto fresh produce stored on a shelf below
  - Indirect cross-contamination involves the transfer of a harmful agent to foods by hands, utensils, or equipment.
    - example of indirect contact: raw chicken prepared with a knife and cutting board and knife and cutting board are not cleaned and sanitized after use

Foodborne Illness

- Eight leading causes of Foodborne Illness identified by CDC were:
- 1) Cross-contamination between raw and cooked and/or ready-to-eat foods. It generally results from poor personal hygiene (worker's hands), or from using unsanitized equipment
- 2) Inadequate re-heating of potentially hazardous foods. All leftovers intended to be served hot must be re-heated to 165 ^{o}F within a 2-hour period

Foodborne Illness

- 3) Foods left in the temperature danger zone (TDZ) too long. Time in the TDZ is cumulative. After 4 hours the potentially hazardous foods must be discarded
- 4) Raw, contaminated ingredients used without further cooking. Examples of this are sliced melons, salad vegetables, and raw eggs used in sauces and salad dressings

Foodborne Illness

- 5) Foods prepared too far in advance. This is generally coupled with holding food in the TDZ too long
- 6) Infected food handlers and poor work habits.
- 7) Failure to properly heat or cook food
- 8) Failure to properly cool food is the number one cause of FBIOs in the United States. Poor cooling practices result in potentially hazardous foods being held in the TDZ for long periods of time

Highly Susceptible Populations

- Other factors that contribute to the onset of foodborne illness
  - Individuals' susceptibility
    - age, weight, current state of health, stress, and fatigue. Infants, young children, pregnant women and elderly people are more susceptible
  - Medications, antibiotics, antacids, and immuno-suppressive drugs, reduce ability to fight off new infections
- Soldiers highly susceptible when deployed in extended ftx's
  - Physical/emotional stress and fatigue weakens immune system
  - exotic diseases or extreme conditions

Food Safety Responsibilities

- TB MED 530 - outlines responsibilities and duties of leaders and support elements, as well as food service mangers and workers
  - Installation Commander
    - maintains the sanitary control of all food and beverages served or dispensed on the installation
  - Commanders
    - ensures that construction, alteration, or modification of facilities have been reviewed and approved by the installation medical authority
    - ensures that all food service personnel are adequately trained and have been medically cleared to handle and serve food

Food Safety Responsibilities

- Preventive Medicine Service
  - advises the commander on the food sanitation and food safety implications of military operations
  - conducts official food safety inspections
  - provides medical examination of food service personnel
  - provides technical guidance and assistance for training of non-supervisory personnel
  - establishes a formal training program for certification of supervisory food service personnel

Food Safety Responsibilities

- Veterinary Activity
  - conducts sanitation inspections IAW AR 40-657 for food procurement, processing, storage, shipment, receipt, and distribution
  - Veterinary personnel investigate reports of food infested, adulterated, or damaged by pests

Food Safety Responsibilities

- Installation Food Advisor (IFA)
  - ensures that food service contracts include requirements for foodservice personnel to receive required sanitation training
  - assists Contract Officer Representative (COR) in developing food sanitation/safety standards and evaluating contractor performance
- The food service facility manager
  - is responsible for providing safe food under clean and sanitary conditions
  - must be able to demonstrate their knowledge of foodborne disease prevention
  - must ensure all food service personnel are trained

Food Safety Responsibilities

- Person-In-Charge
  - may be a shift leader or intermediate supervisor subordinate to the dining facility manager
  - required to be knowledgeable in foodborne diseases and their prevention
  - supervises all food service workers to observe hygiene, food handling, and sanitation practices
  - Must be ServSafe certified.
- Department of Public Works (DPW)
  - responsible for pesticide application when non-chemical measures have failed.
  - responsible for executing work orders for structural deficiencies

Recognizing the Threat

- There are three categories of hazards that are responsible for causing foodborne illnesses and/or injuries:
  - Biological
  - Chemical
  - Physical

Recognizing the Threat

- 1) <u>Biological Hazards.</u>
  - Of the three categories, biological hazards present the most significant threat, accounting for at least two thirds of foodborne illnesses.

Recognizing the Threat

- 2) Chemical Hazards.
  - intoxication due to chemical contamination of food
  - residues on food or food contact surfaces
    - pesticides and metal residues
    - cleaning compounds, camouflage paint
- Metal residues
  - can produce toxic effect in minute quantities
  - galvanized containers w/ acidic foods causes zinc to leach out
  - Lead-based flatware and crystal can present similar problems
- Residues from detergents, cleaning solutions, or concentrated sanitizers

Recognizing the Threat

- Misuse of pesticides either on farm or in facility
- bug spray in food preparation areas
- Food service workers are prohibited by TB MED 530 to apply pesticides in food storage, preparation, or service areas
- purchase food only from approved sources and wash all fresh fruits and vegetables

Recognizing the Threat

- Physical Hazards
  - involve injuries caused by chewing or ingesting foreign objects in food
  - not as significant as biological hazards because threat impacts fewer people
  - Examples: metal shavings packing staples, tacks, and pins, glass, hair, fingernails, wood, stones, toothpicks

Allergens

- FDA classifies food additives as allergens
- cause some people to become ill
- MSG, nitrates, and sulfating agents, are used as flavor enhancers or food preservatives
- Peanuts

Layers of Protection

- prevent foodborne illness by enforcing “Layers of Protection.”
- leading causes of foodborne illness in the Army come from violations in the food safety layers of protection associated with the following:
  - (1) Personal hygiene and work habits
  - (2) Time and temperature discipline
  - (3) Proper cleaning and sanitizing

Personal Hygiene

- Supervisors
  - must identify unsanitary and unhealthy personnel
  - Observations are the only effective means of identifying health risks
  - look for cuts/burns on fingers, hands, and arms; oozing sores, pimples, or boils; and significant coughing or sneezing
  - Workers obligated to disclose conditions if they are experiencing fever, vomiting, or diarrhea

Health Requirements

- TB MED 530 lists diseases that must be disclosed
- Acute gastrointestinal illnesses, jaundice, diarrhea, sore throat w/ fever, Hepatitis A and *Shigella* are a few of reportable diseases/symptoms
- workers sick or w/diarrhea must be cleared by IMA
- SOP outlining criteria
  - for sick call
  - prohibiting personnel from working in food areas
  - return to food service duties
  - approved by the IMA

Uniform Standards

- Uniforms must be clean
- Cook whites generally worn in garrison
- outer smock or apron is optional in garrison, but must be kept clean if worn
- BDUs are worn in field feeding operations

Uniform Standards

- hair restraints, such as a hat or hair net must be utilized by all food handlers
- workers with no hair, a hat must be worn to catch perspiration
- Personnel with beard must wear a beard restraint
- authorized jewelry to be worn by food handlers is a plain, smooth wedding band or medical alert bracelet or necklace ONLY
- supervisors not actively engaged in food preparation may wear a watch.

Hygiene Standards

- Fingernails
  - must not extend beyond the fleshy tip of the finger and
  - must be neatly trimmed and smooth.
  - False fingernails, fingernail adornments, and fingernail polish are not authorized
- Eating and drinking is prohibited in all food preparation areas
  - only exception to this policy is during routine recipe sampling as long as an appropriate method is used
  - workers may drink water as long as it is in a completely enclosed container

Handwashing

- most common source of contamination leading to illness is the fecal-oral-route
- contaminated after using the latrine
- bacteria and viral contamination transferred via contaminated food or utensils
- single use gloves must be used when handling ready-to-eat foods
- hands must be washed between glove changes
- must wash hands after a break, smoking, using latrine, applying make-up, between food handling tasks, before dawning gloves, between glove changes, and hands potentially contaminated

Handwashing Standards

- designated sink in the food preparation area for handwashing
  - Pot/pan sink and janitor's sink not authorized for handwashing
- Hot and cold running water
  - hot water must have a minimum temperature of 110 ^{o}F
  - Liquid soap is preferred
  - trash receptacle must be present
- Only disposable paper towels or air dryer are authorized for drying hands

Handwashing Standards

- Handwashing procedures
  - lathering all exposed skin up to mid-forearm for a minimum of 20 seconds
  - nailbrush should be used to scrub around the nail bed
  - after 20 seconds of scrubbing, rinse and dry

Time & Temperature Discipline

- second layer of protection
- time and temperature controls throughout the flow of food
- must assume all potentially hazardous foods are contaminated
- Thermometers. A bi-metallic, stem-type thermometer used to measure the internal temperature

Time & Temperature Discipline

- Equipment Thermometers
  - Each piece of equipment used for hot or cold food storage and holding, or for cooking should have an indicating thermometer
  - should be placed closest to the door of each unit so as to indicate the warmest reading for cold storage and the coolest reading for hot holding
  - Unauthorized thermometers include mercury, glass, and zone type
- Time-Temperature Indicators (TTI)
  - used to monitor temperatures during transport or storage

Calibrating Thermometers

- ice-water
  - fill insulated container with ice
  - add water to the rim
  - cover top with plastic wrap
  - Press through the plastic until the entire stem is submerged
  - Wait until the temperature reading stabilizes
  - should yield a reading of 32 $\pm$2^{o}F
- boiling method

Thawing

- Potentially hazardous foods held in cold storage must have an internal product temperature of 40 ◦F (4.4°C) or less to significantly retard or reduce bacterial growth.
- Frozen potentially hazardous foods must be tempered using a process that will either keep the internal product temperature from exceeding 40 ◦F or will ultimately raise the temperature to adequately kill existing pathogens.

Thawing

- only three approved methods
- (1) In a refrigeration unit set at an ambient temperature of 38 ◦F.
  - most preferred method and requires proper menu planning
- (2) Thawing as part of the conventional cooking process generally involves products that need little or no preparation
  - thaw as they cook
  - items thawed in a microwave must be immediately transferred to a conventional cooking process; no time delay between steps

Thawing

- (3) least preferred method is placing the item under potable running water that is set at 70 ◦F or less. requirements when used:
  - PHF should be kept in its original wrapper if possible
  - placed in a pan or pot, which is then placed into the sink
  - water at a pressure strong enough to agitate loose particles
  - constant turnover of water during this process
- Regardless of method caution should be taken to avoid cross contamination and time in the TDZ minimized

Preparation & Cooking

- Time and temperature controls are critical
  - most likely stage that bacteria will have an opportunity to grow or survive
- Time in the danger zone is cumulative from the time of receipt to the time of cooking
  - TB MED 530 allows a maximum of 4 hours in the TDZ before it must be discarded
- batch preparation and progressive cooking will reduce the potential hazard of violating time and temperature standards

Preparation & Cooking

- All products containing poultry; stuffed foods, such as stuffed noodle shells and bell peppers; and all leftovers to be eaten hot: 165 ◦F for a minimum of 15 seconds
- Pork roasts/chops; ground beef; and eggs prepared in bulk: 155 ◦F for 15 seconds
- Whole muscle meats (beef and lamb); fish and seafood; and made-to-order eggs: 145 ◦F for 15 seconds
- Cooking standards in TB MED 530, paragraph 3-42

Holding & Serving

- Protecting products from contamination
- tubing on bulk milk dispensers must be cut
  - no more than one inch protrudes from the dispenser
  - cut diagonally (45-degree angle) to allow excess milk to drip free from the tube between use.
  - too long or not cut properly will allow milk to become trapped in the tube and will subsequently result in bacterial growth since it is not refrigerated.
- condiments dispensed using individual packages or approved dispensing units

Holding & Serving

- salad dressing, mustard, ketchup, and other bulk containers wiped down between meals
- Ice dispensed by food service workers or using an automatic ice dispensing unit
- Serving lines and self serve hot or cold bars have sneeze guards
- Self-service items, however, cannot be retained as a leftover unless it is individually wrapped
- Everything is contaminated when it arrives
  - time and temperature discipline will help to prevent growth of bacteria already on PHF's

Holding & Serving

- spot check the internal temperature of PHFs of both hot and cold holding with thermometers
- Verify equipment temperature settings and calibration
- hot holding or serving line items that fall below 140 ◦F should be re-heated to 165 ◦F or discarded if 4 hours in the TDZ has occurred
- Items that have been re-heated to 165 ◦F are considered leftovers and cannot be retained for an additional 24 hours

Leftovers

- any unserved food remaining at the end of a meal period
- must be labeled with item name, date/time
- only items that were held at safe temperatures, protected from contamination, and served by food service workers may be retained as leftovers
- may be retained for up to 24 hours if cooled properly and held at 40 ◦F or below
- Hot leftovers may be retained for up to 5 hours if held at 140 ◦F or above

Leftovers

- Rapid cooling
  - reduce bulk products and increase the surface area of a product
  - Use 2-inch shallow pans, ice baths, slicing, stirring, blast chillers, or a combination
- hot items must be cooled from temperatures that are above 140 ◦F to 70 ◦F in 2 hours, then from 70 ◦F to 40 ◦F or below within 4 hours
  - document time and temperature at the beginning of cooling, when 70 ◦F or below was attained, and when 40 ◦F was achieved
  - fail to reach 70 ◦F within 2 hours, rapidly reheat to 165 ◦F and try cooling again, or discard the item

Sandwiches

- made-to-order sandwich is prepared on a consumer's request
- mass feeding operations, made-to-order sandwiches may be batch prepared no more than 1 hour prior to service
- must be disposed of 3 hours after preparation
- Pre-Prepared Sandwiches are sandwiches that are being prepared for intended service beyond the current meal period
- No leftovers may be used when preparing these sandwiches

Sandwiches

- Hot sandwiches may be held to 5 hours at 140 ◦F
- Frozen sandwiches prepared by a food manufacturer retained IAW the expiration date on label
- Sandwiches pre-prepared then frozen in the dining facility must be consumed or discarded within 7 days of removal from freezer
- Refrigerated pre-prepared sandwiches purchased from a manufacturer must be consumed IAW label
- Sandwiches pre-prepared in designated sandwich preparation area retain for 60 hours if held at 40 ◦F

Pre-Prepared PHF's

- Pre-prepared PHF's are prepared in advance for future service beyond a specific meal
  - Cooked/prepared and immediately cooled to 40 ◦F
  - labeled as "pre-prepared" with date and time
- The expiration of pre-prepared PHF's are as follows:
  - frozen in DF, consumed within 24 hours from date of thaw
  - Manufacturer-processed frozen foods consumed within 7 days (non-frozen period)
  - Refrigerated RTE PHF's packaged by a food processing plant from a bulk open container within 48 hours of container opening

Cleaning & Sanitizing

- All non-food contact surfaces in DF must be cleaned after each meal
- Food contact surfaces, (food service equipment and utensils) must be properly cleaned and sanitized
  - three-compartment sink
  - Dishwasher
  - Clean-in-place method
- Sponges, steel wool, wooden handled brushes, and common dishtowels prohibited
- Reusable wiping cloths may be used only if stored in sanitizing solution

Manual Cleaning & Sanitizing

- 3-compartment sink: clean prior to use
- Wash sink: hot, soapy water at 110◦F
  - do not use machine dishwashing compound(s) for manual warewashing
- Rinse sink: hot water that is at least 120 ◦F
  - water becomes soapy or grease film develops, refill
- Sanitizing sink: heat or chemical
  - heat method: 30 seconds @ 171 ◦F
  - Chlorine Bleach: 100 ppm @ 75 ◦F for 15 seconds
  - Iodine Solution: 12.5 - 25 ppm @ 75 - 120 ◦F for 30 seconds
  - Quats: 200 ppm @ 75◦F for 30 seconds

Sanitizing

- sanitizing food contact surfaces of clean-in-place equipment, double sanitizing concentration
  - chlorine however, a 100-ppm solution is adequate
  - For all others a second clear water rinse may be necessary
- Sanitizers must be used at the proper concentration to effectively kill pathogenic organisms
- Spot-check water temperature and pH
- Equipment and utensils cleaned and sanitized allowed to air dry

Cleaning Schedules

- Reasons for organized cleaning program:
- identifies facility sanitation resource requirements
- distributes workload
- Reduces duplication of effort
- Pinpoints responsibility
- Establishes basis for inspection
- Provides training aid by identifying hard to clean areas/equipment and incorporate them into the training program
- Ensures tasks will not be overlooked

Steps in a Cleaning Program

- Developing a cleaning program SOP:
- 1. Survey your cleaning needs
  - Evaluate all areas of the facility
- 2. Obtain cleaning materials suitable for each surface being cleaned
  - approved by the EPA
- 3. Devise cleaning schedule:
  - Who, What, When, and How
- 4. Introduce cleaning program and HAZCOM procedures to all food service workers
- 5. Supervise all processes

Clean: Surfaces Often

- Bacteria can spread throughout the kitchen and get on to cutting boards, knives, sponges and counter tops.
- prevent food contamination from outside sources:
  - Wash hands in hot soapy water before preparing food and after using the bathroom, changing diapers and handling pets
  - use warm water to moisten their hands and then apply soap and rub their hands together for 20 seconds before rinsing thoroughly

Clean: Surfaces Often

- Wash cutting boards, knives, utensils and counter tops in hot soapy water after each food item
- Use plastic or other non-porous cutting boards
- Cutting boards should be run through the dishwasher or washed in hot soapy water
- Consider using paper towels to clean up kitchen surfaces
- cloth towels - wash them often in hot water

Separate

- Principles to preventing cross contamination are:
  - Keep raw meat, poultry and seafood separate from each other and other food
  - Store raw meat, poultry on the bottom shelf
  - use one cutting board for raw meat products and another for salads and other foods that are ready to be eaten
  - wash cutting boards and utensils with hot soapy water after contact with raw meat, poultry and seafood
  - Never place cooked food on a plate that previously held raw meat, poultry or seafood

Chill: Refrigerate Promptly

- cold temperatures keep most harmful bacteria from growing and multiplying
- maintain a temperature of 40°F or lower
- freezer units maintain below 0°F
- Never defrost food at room temperature. Use the refrigerator, cold running water or the microwave.
- Divide large amounts of leftovers into shallow containers for quick cooling in the refrigerator
- With stuffed meats, remove the stuffing and refrigerate it in a separate container

Cook: Proper Temperatures

- Use a meat thermometer to verify thorough cooking
- Cook roasts and steaks to at least 145°F. Whole poultry, cook to 180°F for doneness
- Cook ground meat to at least 160°F
- Cook eggs until the yolk and white are firm, not runny
- Cook fish until it is opaque and flakes easily
- Make sure there are no cold spots in food
- Heat other leftovers thoroughly to 165°F

Food Sources

- obtained from approved sources that comply with AR 40-657
- Food in hermetically sealed containers shall be obtained from regulated food processing plants
- Food prepared in a private home may not be used or offered for human consumption in a food establishment
  - does not apply to private/social functions (such as chapel suppers, family childcare homes, neighborhood cookouts, unit bake sales, or similar functions) provided the food is identified as home-prepared food on a sign or label

Food Sources

- Packaged food shall be labeled as specified by law
- Fish, other than shellfish, that are intended for consumption in raw form have special requirements
- Wild mushroom species picked in the wild have special requirements (highly discouraged)
- Meats shall be obtained from establishments listed in USDA's Meat and Poultry Inspection Directory
- Game animals received for shall be commercially raised for food

Temperature

- Refrigerated potentially hazardous foods shall be at a temperature of 40°F (4.4°C) or below when received
  - Exception: if a temperature other than 40 °F (4.4 °C) is specified in law (milk, molluscan shellfish, and shell eggs)
  - These foods shall be cooled to 40 °F (4.4 °C) within 4 hours of receiving
- cooked foods received at 140 °F (60 °C) or above
- food shipped frozen shall be received frozen
- free of evidence of temperature abuse

Additives

- Food may not contain unapproved food additives or additives that exceed specified amounts
- 21 CFR 170 through 21 CFR 180 relate to food additives (GRAS)
- pesticide residues in 40 CFR 185

Package Integrity

- Food packages shall be in good condition and protect the integrity of the contents so that the food is not exposed to adulteration or potential contaminants. Food package defects are classified in 7 CFR 42

Hands

- Food employees must properly wash their hands whenever there may have been a chance they may have become contaminated in any way
- Except when washing fruits and vegetables food employees may not contact exposed, ready-to-eat food with their bare hands and must use suitable utensils (such as deli tissue, spatulas, tongs, single-use gloves, or dispensing equipment)
- Food employees shall minimize bare hand and arm contact with exposed food that is not in a ready-to-eat form

Tasting

- A food employee may not use a utensil more than once to taste food
- A two- utensil method for recipe tasting is appropriate
  - use one utensil to remove the food from the container and to place the food in a clean, sanitary bowl or plate. Use a second utensil to taste the food
  - discard any unused portion of food that was removed, and clean and sanitize the utensil and bowl or plate

Preventing Contamination

- Food shall be protected from cross contamination by separating raw animal foods, during storage, preparation, holding, and display, from raw ready-to-eat food, and cooked ready-to-eat food
  - Use separate equipment for each
  - Arrange raw PHF's by cooking temperature
    - lower cooking temperatures-top
    - higher cooking temperatures-bottom
- (3) Arranging food in equipment so cross contamination is prevented
- prepare each type at different times or in separate areas

Preventing Contamination

- (4) Storing ready-to-eat food and cooked foods separately or above raw PHF’s
- (5) Clean and sanitize equipment and utensils properly
- (6) Store food in packages, covered containers, or wrappings
- (7) Clean hermetically sealed containers before opening
- (8) Protect food containers that are received packaged together in a case

Preventing Contamination

- (9) Store damaged, spoiled, or recalled food in designated areas that are separate from food, equipment, utensils, linen, and single-service and single-use articles
- (10) Separate fruits and vegetables from ready-to-eat food, before they are washed

Food Storage Containers

- Working containers holding food/ingredients removed from original packages (such as cooking oils, flour, herbs, potato flakes, salt, spices, and sugar) shall be identified by common name

Ice

- Ice may not be used as food after use as a medium for cooling the exterior surfaces of food, packaged foods, or cooling coils and tubes of equipment
- Packaged food may not be stored in direct contact with ice or water if subject to the entry of water
- Generally, unpackaged food may not be stored in direct contact with undrained ice
- Whole, raw fruits or vegetables; cut, raw vegetables (such as celery or carrot sticks or cut potatoes); and tofu may be immersed in ice or water

Ice

- Raw chicken and raw fish that are received immersed in ice in shipping containers may remain in that condition while in storage awaiting preparation, display, service, or sale
- Ice intended shall be dispensed from self-service, automatic ice dispensing machines or placed in cleaned and sanitized self-draining container
- Use clean and sanitized scoops, tongs, or other ice-dispensing utensils
- Glassware is prohibited for scooping ice

Equipment & Utensils

- Food may not contact surfaces of equipment and utensils that are not cleaned and sanitized
- pauses in food preparation or dispensing
  - Store food preparation and dispensing utensils in the food with handles above the top of the food and container
  - in non-potentially hazardous food, store utensils with handles above the top of the food within containers or equipment that can be closed, such as bins of sugar, flour, or cinnamon
  - may also store on a clean portion of the food preparation table or cooking equipment,
  - shall be cleaned and sanitized at proper frequencies

Gloves

- single-use gloves shall:
  - be used for only one task such as working with ready-to-eat food or with raw animal food
  - used for no other purpose
  - discarded when damaged or soiled or when interruptions occur in the operation
- Slash-resistant gloves
  - direct contact only with food, such as frozen food or a primal cut of meat, that will be subsequently cooked
  - may be used with ready-to-eat food that shall not be subsequently cooked if gloves have a smooth, durable, and nonabsorbent outer surface or are covered with a smooth, durable, nonabsorbent glove or single-use glove

Gloves

- Cloth gloves may not be used in direct contact with food, such as frozen food or a primal cut of meat, unless the food is subsequently cooked
- Cloth gloves shall be washed and sanitized at least daily and shall be changed when there is an interruption in the operation or when they become damaged or soiled

Food Storage

- protected from contamination by storing the food in a clean, dry location where it is not exposed to splash, dust, or other contamination
- stored at least 6 in above the floor
- Food in packages and working containers may be stored less than 6 in (15 cm) above the floor on certain occasions.
- Pressurized beverage containers, cased food in waterproof containers (bottles or cans); and milk containers in plastic crates may be stored on a floor (not recommended)

Prohibited Food Storage Areas

- locker rooms, toilet rooms, dressing rooms, or mechanical rooms
- not in rooms used to hold garbage, under sewer lines that are not shielded, under leaking water lines, under open stairwells or under any other sources of contamination
- PHF’s dispensed by a vending machine shall be in the package it was placed at the food establishment or food processing plant
- During preparation, unpackaged food shall be protected sources of contamination

Food Display

- Except for nuts in the shell and whole, raw FF&V that are intended for hulling, peeling, or washing by the consumer before consumption, food on display shall be protected from contamination

Condiment Protection

- protected from contamination by being kept in
  - either dispensers that are designed to provide protection
  - protected food displays s
  - original containers designed for dispensing
  - individual packages or portions.
- may be made available from condiment self-service dispensing equipment at those locations having an on-duty attendant
- Use of relish bowls and other similar non-self-closing condiment containers is prohibited

Returned Food

- After being in the possession of a consumer, food that is unused or returned by the consumer may not be offered as food for human consumption
- Food that is not potentially hazardous, such as crackers and condiments, in an unopened original package and maintained in sound condition may be re-served or resold

Dispensing of Cereal and Breads

- Breakfast cereals dispensed in individual serving packages, in 12- to 16-ounce packages, or in protected bulk cereal bowls
  - Proper utensils shall be provided
  - Any remaining bulk cereal after serving period shall be discarded
- Bread and bread rolls dispensed in individual serving packages, bulk dispensers, or in pans or bowls protected by use of food guards, display cases, or other effective means
  - Proper utensils shall be provided
  - Any remaining after serving period shall be discarded

Cooking Raw Foods

- Raw animal foods shall be cooked to heat all parts to minimum requirements for temperature and time
- 145 °F (63 °C) or above for 15 sec
  - raw shell eggs for immediate service
  - Fish & seafood
  - Beef, veal, lamb, mutton
  - select commercially raised game animals

Cooking Raw Foods

- 155 °F (68 °C) for 15 seconds or the temperature specified
  - pork and certain exotic game animals
  - comminuted fish/meats/game animals, injected meats, eggs not for immediate service
- 165 °F (74 °C) or above for 15 sec
  - Poultry & certain wild game animals
  - stuffed fish/meat/pasta or stuffing w/ fish/meat/poultry
  - Stuffing/dressing cooked separately

Cooking Raw Foods

- beef and corned beef roasts shall be cooked to specified temperature
- may vary from requirements only if the food is a raw animal food (raw egg, raw fish, raw-marinated fish, raw molluscan shellfish, steak tartare) or a partially cooked food (lightly cooked fish, rare meat, soft cooked eggs) offered RTE, and the consumer informed
- Exception: regulatory authority grants variance based on approved HACCP plan
- Fruits and vegetables cooked for hot holding shall be cooked to 140 °F

Microwave Cooking

- Raw animal foods cooked in a microwave shall be rotated/stirred during cooking to compensate for uneven distribution of heat
- must also be covered to retain surface moisture
- all raw animal foods cooked exclusively in a microwave shall be heated to a temperature of 165 °F (74 °C) in all parts of the food
- Upon completion, will be allowed to stand covered for 2 minutes after cooking to obtain temperature equilibrium

Reheating for Hot Holding

- PHF’s cooked, cooled, and reheated for hot holding shall be reheated to 165°F for 15 seconds
- PHF’s reheated in a microwave oven for hot holding shall be reheated so that all parts of the food reach a temperature of at least 165 °F (74 °C) and the food shall be rotated or stirred, covered, and allowed to stand covered for 2 minutes after reheating
- RTE food taken from commercially processed, hermetically sealed container to 140°F for hot holding

Reheating for Hot Holding

- Reheating for hot holding shall be done rapidly, and the time the food is between the temperatures of 40°F and 165°F may not exceed 2 hours
- Remaining unsliced roast beef properly cooked may be reheated for hot holding if oven parameters are met

Frozen Food & Thawing

- Stored frozen foods shall be maintained frozen
- Frozen PHF's shall be thawed:
- a. refrigeration maintaining food at 40°F or less
- b. As part of a cooking process
- c. Completely submerged in running water at 70°F or below, with sufficient water velocity

Cooling

- Cooked PHF's:
  - cooled within 2 hours, from 140°F to 70°F and within 4 hours from 70°F to 40°F (6 hours total time)
  - PHF's cooled within 4 hours to 40°F if prepared from ingredients at room temperature
- PHF's received allowing a temperature above 40°F cooled within 4 hours to 40°F

Cooling Methods

- Cooling shall be IAW established time and temperature requirements by:
  - placing the food in shallow pans
  - separating the food into smaller or thinner portions
  - using equipment designed for rapid cooling
  - stirring the food in a container placed in an ice water bath
  - using containers that facilitate heat transfer
  - adding ice as an ingredient

Cooling Methods

- food containers in which food is being cooled shall be arranged in the equipment to provide maximum heat transfer through the container walls
- food may be loosely covered or uncovered if protected from overhead contamination
- A cooling log or chart shall be maintained to record the time and temperature of food being cooled

PHF: Hot & Cold Holding

- Sufficient holding facilities shall be available to assure the maintenance of PHF's at required temperature during hot or cold holding
- Except during preparation, cooking, cooling, or when time is used as the public health control, all potentially hazardous foods shall be maintained at 140°F or above, or at 40°F or below
  - except roasts cooked at approved alternate temperatures and times

Marking Sandwiches

- Sandwiches are made-to-order or pre-prepared
- Made-to-order sandwiches are prepared for immediate service in response to a consumer's order
  - may be batch prepared no more than 1 hour prior to service provided that sandwiches are individually wrapped or protected from contamination
  - marked with the date and time of preparation
  - not consumed within 3 hours from the point of preparation shall be discarded
  - not be retained as leftovers

Marking Sandwiches

- Pre-prepared sandwiches are for service beyond a specific meal.
  - individually wrapped
  - marked with date/time of preparation
  - Pre-prepared sandwiches include hot, refrigerated and frozen sandwiches
- hot sandwiches shall be cooked to proper temp and held at 140°F
  - Maximum shelf life for these sandwiches is 5 hours

Marking Sandwiches

- Frozen sandwiches produced at a food processing plant shall be consumed by the manufacturer's stated shelf life
- The IMA shall establish the shelf life for frozen sandwiches prepared at a military food establishment
- Thawed sandwiches shall not be refrozen
- The IMA shall establish a shelf life of at least 60 hrs for refrigerated sandwiches prepared in designated sandwich preparation area

Marking Sandwiches

- sandwiches prepared at food establishments without designated area shall be consumed within 5 hours of preparation
- Meat, chicken, tuna fish, eggs, and other similar high-protein salad fillings used in pre-prepared sandwiches shall be commercially acidified to a pH of 4.5 or below
- The sandwich or ingredient food processing plant shall provide written laboratory results or certificate of conformance stating that ingredients comply with acidification requirements

Leftover Disposition

- Leftovers may be retained for reservice or consumption
- Leftovers shall be labeled with DA Label 178 or other IMA approved

LEFTOVERS – USE WITHIN 24 HOURS Removed from Service TB MED 530; OTSG	
DATE	TIME

Leftover Disposition

- may be retained 5 hours if maintained at 140°F after initial cooking
- may be kept 24 hours at 40 °F if properly cooled
- can be served for up to 4 hours if refrigerated leftovers are properly reheated
- may be offered for service once then discarded
- Food creamed or receive extensive preparation (hashes, gravies, stuffings, creamed meats), raw or partially cooked PHF’s shall not be retained
- Leftovers shall not be frozen or mixed with fresh ingredients

Time as a Public Health Control

- Time only, rather than time in conjunction with temperature
- requirements:
  - a. Food shall be identified to indicate the time 4 hours from removal from temperature control
  - b. food shall be cooked and served within 4 hours from the point in time when the food is removed from temperature control
  - c. food in unmarked containers or packages or exceed a 4-hour limit shall be discarded
  - d. Written procedures ensuring compliance available to the regulatory authority upon request

Person-in-Charge (PIC)

- food establishment manager shall be the person-in-charge or shall designate a person-in-charge
- In the absence of the person in charge, there will be an identified alternate person-in-charge present at the food establishment during all hours of operation
- The overall person-in-charge is responsible to ensure that all food handlers receive medical clearances required by the IMA

EMPLOYEE HEALTH

- The PIC shall:
  - require food employees and applicants offered employment to report information about their health and activities related to diseases transmissible through food
  - require a food employee or applicant shall report the information, including symptom and the date of onset of jaundice or certain illnesses
  - require employees with a lesion containing pus, that is open or draining and on the hands or wrists, on exposed portions of the arms, or on other parts of the body to be excluded from food preparation facilities unless covered

EMPLOYEE HEALTH

- Employees diagnosed with *Salmonella typhi* (S. typhi), *Shigella* spp., *E. coli* O157:H7, or Hepatitis A virus - exclude completely
- other diseases such as amebiasis, camplyobacteriosis, cholera, norwalk virus, giardiasis, staphylococcal or streptococcal infections, yersiniosis, or had a recent illness should also be excluded

EMPLOYEE HEALTH

- Employees suspected of causing or has been exposed to a disease outbreak, or a person who lives in the same household as a person diagnosed with certain diseases should be excluded
- Persons who traveled OCONUS with identified epidemic or endemic gastrointestinal diseases, or work OCONUS and traveled to areas with identified epidemic or endemic gastrointestinal diseases should be excluded until an acceptable time has passed indicating they are free of disease

EMPLOYEE HEALTH

- The PIC shall exclude an employee from a food establishment if diagnosed with an agent capable of being transmitted through food
- shall also be restricted from working with exposed food, clean equipment, utensils, and linens; and unwrapped single-service and single-use articles
- Specific timetables are provided in TB MED 530 for each disease
- An excluded food employee shall be cleared by the IMA or representative prior to returning to food operations

EMPLOYEE HEALTH

- The PIC may allow an exception for certain illnesses with IMA approval
- person shall provide written medical documentation (licensed medical physician or the IMA or designated representative) specifying that the person may work in an unrestricted capacity in a food establishment and is free of infectious agents
- Tables 2-1 and 2-2 in TB MED 530 for exclusion/restriction requirements and clearance requirements

Supervisor or PIC Training

- The PIC, the COR, the Quality Assurance Evaluator responsible for contract quality assurance functions on food service contracts, and food service supervisor are required to attend a certified training program in food sanitation
- must be renewed every 4 years or complete 12 hours of continuing education
- shall include the following topics: food, HACCP, facilities, food handlers, and management
- records maintained at the establishment where employees work

Food Employee's Training

- All food employees and KP supervisors shall receive a minimum of 8 hours introductory food sanitation training
- New food employees shall receive this 8-hour introductory training within 30 days of beginning food service duties
- All food employees shall receive a minimum 4-hour annual food sanitation refresher training that may be accumulated over the 1-year time period after the initial or subsequent refresher training

Food Employee's Training

- Temporary food employees, assigned for 30 days or less, bartenders, waiters, and waitresses that do not prepare food only require 4 hours of initial training and are exempt from the 8 hour training requirement
- Training records shall be maintained at establishment where employees work